

## ABSTRACT

Improved stability in a regulator having a sample-and-hold. Coupling an input voltage to an input node of the sample-and-hold circuit is provided. Activating the sample-and hold circuit in response to the input voltage and sensing an output voltage at an output node coupled to the sample and hold circuit is also provided. Determining whether the input voltage at the input node is greater than the output voltage at the output node and providing a sample-and-hold function based on the determination are also provided. A regulation circuit is provided. A sample-and-hold circuit coupled to input and output nodes is also provided. The transfer function of the sample-and-hold circuit is pseudo-all-pass if the input voltage at the input node is greater than an output voltage at the output node and is a substantially constant signal if the input voltage at the input node is less than the output voltage at the output node.